



## Project Report

### Balancing the Shortage of Skilled Workers in Inpatient Care.

#### Summary

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**Project:** To compensate for the shortage of skilled workers and to relieve the nursing staff, a project was carried out in inpatient care. Patients in inpatient care were treated by additional staff provided by the Therapiezentrum Hardpark, who cared for the residents using the EvoCare platform.

##### Results:

**86% of the treated patients showed significant improvement in the observation parameters.**

**Untreated patients, on the other hand, deteriorated in their condition.**

**The nursing staff was significantly relieved by 6 hours per month per resident and a care gap was effectively closed.**

**Overall, the project was a complete success.**

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##### Unsere Dienstleistungen:

Physiotherapie  
Krankengymnastik  
Manuelle Therapie  
Atemtherapie  
Lymphdrainage

#### Procedure:

To enable additional care for people with disabilities in inpatient care, the Therapiezentrum Hardpark, in cooperation with a local nursing home, carried out the project described below and evaluated it for the KVB.

To care for the residents, the Therapiezentrum took over parts of the care.

After a medical prescription, the digital treatment via the EvoCare platform was used in addition to the classic therapy in the facility.

The platform-based service is already evaluated, recognized and approved as a core service for multimodal service provision in rehabilitation.

#### Implementation:

After anamnesis and diagnosis, the patients were given the prescribed therapy exercises.

For this purpose, a therapeutic assistant from the Therapiezentrum supported the residents with their therapy and also with the operation of the digital devices used to deliver the exercises to the patients 3 times a week.

The additional staff also supported the residents with the exercises, so that no nursing staff was needed during the therapy.

To ensure technical accessibility, the Therapiezentrum also provided the necessary barrier-free rental equipment for stationary use.

In addition to the medical examination, at the request of the KVB, an on-site examination of the residents was carried out by a trained therapist from the Therapiezentrum.

The therapy was always carried out digitally and personally by therapists from the Therapiezentrum using the closed-loop method according to Dr. Hein.

#### Experience for the residents:

1. Additional care came to the nursing home.
2. The therapy team brought the EvoPad from resident to resident.
3. There was "supervised therapy in the room" 3 times a week.
4. The on-site care of the residents was taken over by an additional person in the facility, an assistant from the Therapiezentrum.

#### General results:

1. Refinancing: The medical care sector was used for refinancing. The on-site care of the residents was carried out for 30 minutes per day per resident on three days per week. This gave the facility the advantage that no nursing staff had to be present during the therapy time - i.e. around 6 hours of "free time" per resident per month was created. The nursing staff and the other departments were very interested in the further use of the system.
2. The residents had great joy, high motivation and very good compliance: "It was fun".
3. Thanks to the assistance, the EvoCare devices were easy to use and could be used by everyone - they were completely barrier-free.
4. The undercare problem was solved - the residents received therapy again.
5. The medical parameters were significantly improved and the results could be quickly prepared for the prescribing physicians, so that simple decisions about follow-up measures were possible.

## Medical Results

This section describes the medical and functional development of the residents.

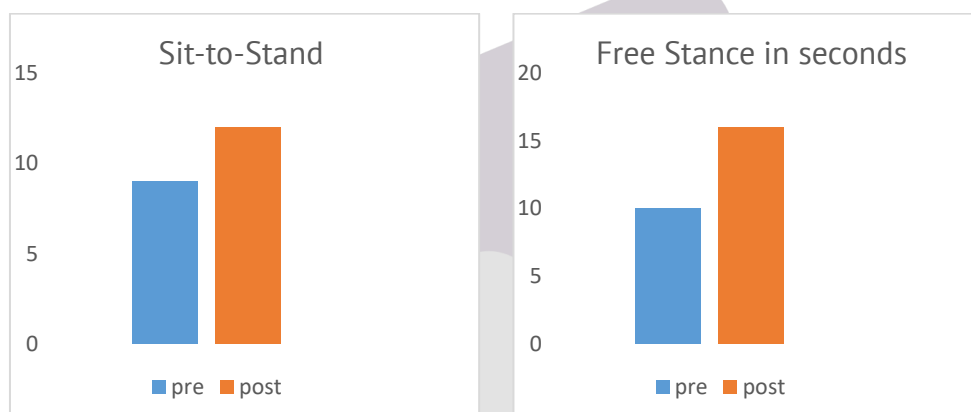
### A. Development of treated residents

#### Patient 1, born 1950; Diagnosis: R29.6 tendency to fall; Treatment: 12 x physiotherapy

Patient 1 shows a pronounced thoracic kyphoscoliosis, as well as significant neuromuscular functional limitations in terms of balance and muscle recruitment.

At the beginning of the therapy, the range of motion of the thoracic spine was flexion/extension 40-20-0 & rotation (r/l) 10-0-10. Mr. B. was able to hold the stand for 10 seconds with closed feet and eyes. In the sit-to-stand test, Mr. B. was able to perform 9 repetitions/minute.

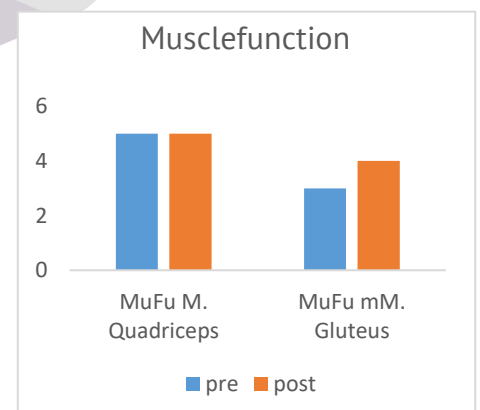
The post-treatment measurement showed a thoracic mobility of F/E 40-20-0 and rotation (r/l) 10-0-20. The stand with closed feet and eyes improved to 16 seconds. The sit-to-stand test improved to 12 repetitions/minute.



#### Patient 2, born 1936; Diagnosis: R26.2 Difficulty walking; Treatment: 12 x physiotherapy

During the initial examination, Patient 2 complained of gait and postural instability that had persisted for 1-2 years, with multiple falls. She showed restricted range of motion in both knee joints (left: 140-15-0; right: 140-5-0) and a muscle strength of 5 in the quadriceps and 3 in the gluteal region. Patient 2 was able to stand up from sitting 10 times within 40 seconds.

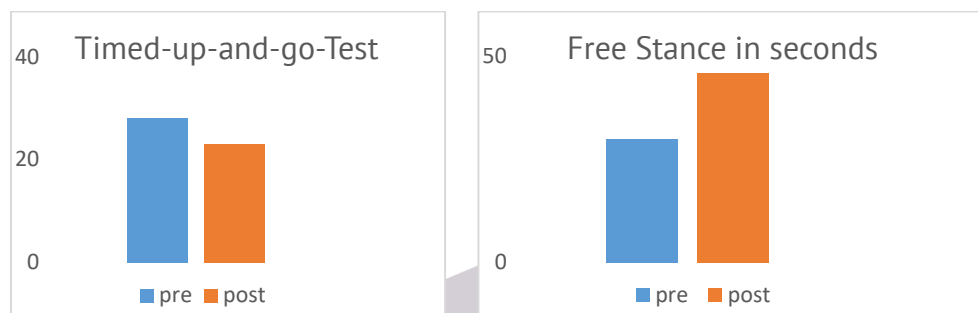
The initial measurement showed a knee mobility of left 150-10-0 & right 150-5-0, as well as a muscle strength of 5 in the M. quadriceps and 4 in the gluteal region. Patient 2 was able to stand up from sitting 14 times within 49 seconds.



**Patient 3, born 1946; Diagnosis: R29.6 Tendency to fall; Treatment: 12 x physiotherapy**

During the initial examination, Patient 3 complained of pulling, deep, intermittent pain in the lumbar region, as well as in the right gluteal region. He also reported cramping muscles in the upper extremity after 1 hour of writing. The shoulder joints showed no active or passive range of motion restrictions (MuFu 3). A MuFu value of 3 was found in the gluteal region bilaterally. In the Timed-up-and-go test, a time of 28 seconds was measured, and Patient 3 was able to stand upright with closed eyes and feet 10 cm apart for 30 seconds.

In the final examination, Patient 3 reported that it now took 2 hours of writing to reproduce the cramping pain in the upper extremity. The muscle function of the gluteal muscles increased to 4. The Timed-up-and-go test improved to 23 seconds and the standing with closed eyes improved to 46 seconds.



**Patient 4, born 1949; Diagnosis: Q90.9 Down syndrome; Treatment: 12 x physiotherapy**

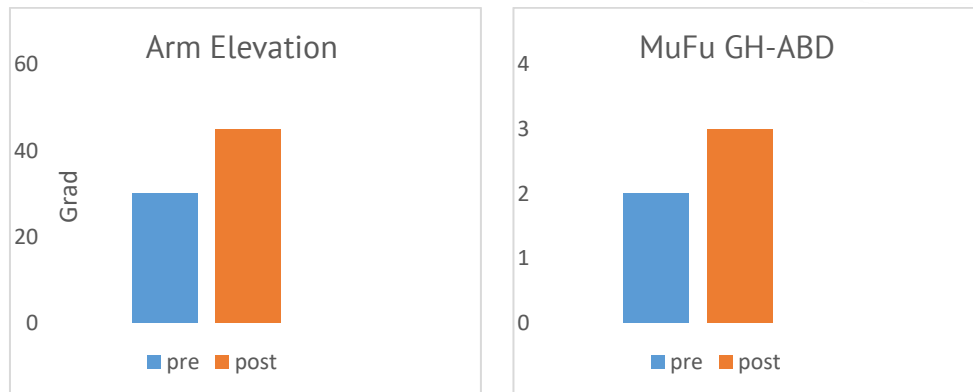
**Initial Examination**

Patient 4 complained of persistent ventromedial knee pain on the left side. The left knee joint showed a free range of motion. Furthermore, Patient 4 showed a marked muscular hypotonia with a lack of power development of the spinal erector muscles. It was not possible to assume a free sitting position during the initial examination. There was an elevation capacity in both shoulder joints of 30° and a muscle function of 2 in glenohumeral abduction.

**Final Examination**

At the time of the final examination, there was no change in the reported knee pain.

The arm elevation could be increased to 45°. The MuFu of glenohumeral abduction could be increased to 3 and Patient 4 showed a free sitting position of about 5 seconds.



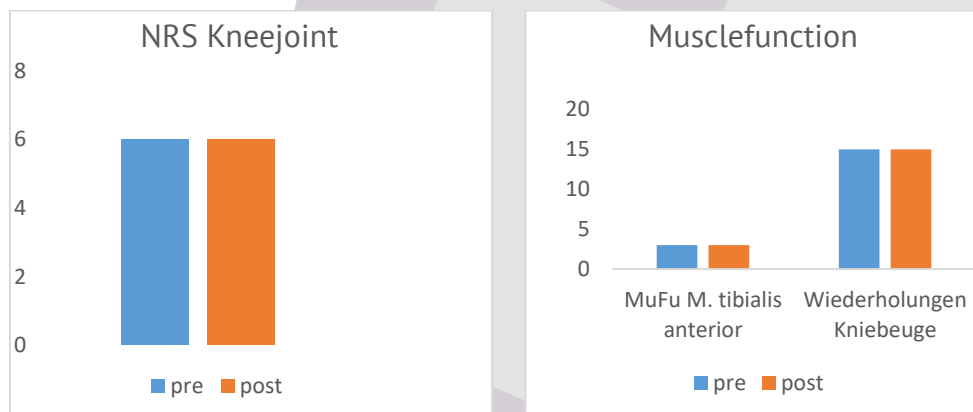
**Patient 5, born 1950; Diagnosis: R 29.6 Tendency to fall; Treatment: 12 x physiotherapy**

**Initial Examination**

Patient 5 complained of pulling, deep, intermittent lower back pain, as well as ventral knee pain. In the movement examination with end-range symptom reproduction of the knee joint in extension (NRS 6/10) and flexion (NRS 6/10). In the lumbar region, there were painful movement restrictions in extension, end-range flexion, left lateral flexion and right rotation. In terms of muscle strength, there was a MuFu 3 of the M. tibialis anterior, as well as 15 possible repetitions of a squat.

**Final Examination**

The final examination showed no improvement in the reported pain scores or functional performance tests.



**Patientin 6, Jahrgang 1955, Diagnose S14.6 Verletzung sonstiger Nerven des Halses, Heilmittel: 12 x KG**

Fr. K. klagte zum Zeitpunkt der Eingangsuntersuchung über multiregionale Schmerzlokalisationen im Bereich der Schultergelenke, des unteren Rückens, sowie des ventralen rechten Kniegelenkes. In der Bewegungsuntersuchung zeigte sich Glenohumeral in Flexion / Extension 120-0-40 und Abduktion / Adduktion 90-0-30 mit einem MuFu-Wert von 3. Funktionell war Frau Kern in der Lage 15 Sekunden mit ca. 15 cm breitem Stand frei zu stehen und im Sit-to-Stand-Test 12 Wiederholungen in einer Minute zu tätigen

Die Ausgangsmessung ergab eine glenohumerale Beweglichkeit Flexion / Extension 130-0-50 und Abduktion / Adduktion 90-0-30. Frau K. konnte 50 Sekunden frei stehen und 15 Wiederholungen im Sit-to-Stand-Test tätigen.

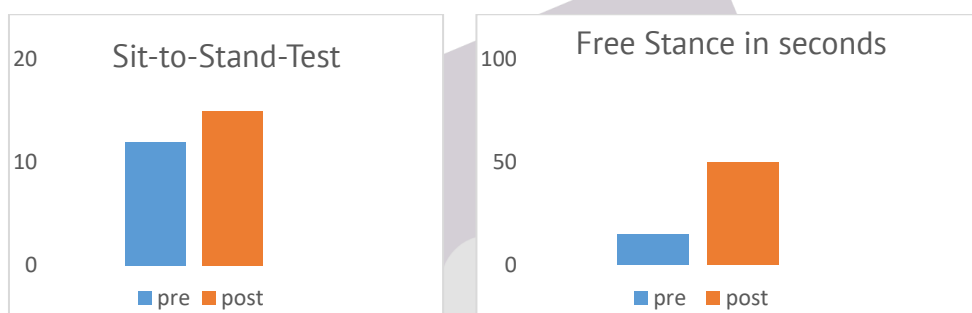
**Patient 6, born 1955; Diagnosis S14.6 Injury of other nerves of the neck; Treatment: 12 x physiotherapy**

**Initial Examination**

At the time of the initial examination, Patient 6. complained of multiregional pain localizations in the area of the shoulder joints, the lower back, and the ventral right knee joint. The range of motion examination showed glenohumeral flexion/extension 120-0-40 and abduction/adduction 90-0-30 with a MuFu value of 3. Functionally, Patient 6 was able to stand freely for 15 seconds with a stance width of about 15 cm and to perform 12 repetitions in the sit-to-stand test in one minute.

**Final Examination**

The final measurement showed a glenohumeral mobility of flexion/extension 130-0-50 and abduction/adduction 90-0-30. Patient 6 was able to stand freely for 50 seconds and perform 15 repetitions in the sit-to-stand test.



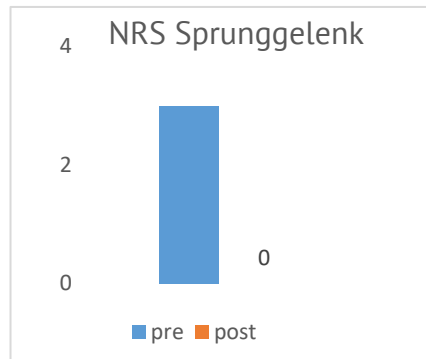
**Patient 7, born 1951; Diagnosis: R26.2 Difficulty walking; Treatment: 12 x physiotherapy**

**Initial Examination**

Patient 7 complained of painful movement restrictions of the left ankle (NRS 3/10), as well as the left knee joint. The ankle showed a range of motion in plantar flexion/dorsiflexion of 60-20-0 and the left knee joint in flexion/extension of 100-15-0. The responsible nurse reported a progressive decline in physical performance in recent months. Muscle function testing of glenohumeral flexion and abduction showed a value of 3 bilaterally.

**Final Examination**

In the final examination, Pat 7 reported that the pain in the ankle was no longer present (0/10). The range of motion of the left ankle in plantar flexion/dorsiflexion improved to 80-0-10 and in the left knee to 110-5-0. There was no improvement in the general muscle function of glenohumeral elevation and abduction.



## B. Development of Untreated Residents

During the initial examination, several residents were examined who did not receive any further physiotherapy. One resident was able to be included in the final examination.

### Patient 1, born 1954

Ms. T. suffered an unspecified fracture of the left upper ankle joint. The visual examination showed an intra-articular edema formation in the Art. Talocruralis. The passive range of motion examination showed a range of motion of the left ankle joint in plantar flexion/dorsiflexion of 50-0-10 and pronation/supination of 5-0-10. There was a muscle function of 4 in the M. quadriceps femoris and 3 of the ischiocrural muscles.

In the final examination, a range of motion of the left ankle joint of plantar flexion/dorsiflexion 50-0-10 and pronation/supination 10-0-10 was measured. There was a muscle function of the M. quadriceps femoris, as well as the ischiocrural muscles, of 3.

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